JAPAN P&I CLUB
日本船主責任相互保険組合

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JAPAN P&I NEWS

To the Members

Importance of Cargo Securing in Transporting Lithium-ion Batteries

In a recent investigation, the United States National Transportation Safety Board (NTSB) has published findings and "Lessons Learned" on its website regarding a fire incident involving the transport of lithium-ion battery energy storage system units aboard a cargo vessel.

The NTSB determined that the probable cause of the fires aboard the cargo vessel was the breakaway of battery energy storage systems (BESS) units in the cargo holds during heavy weather conditions due to improperly secured lashing belts, which resulted in internal structural deformation of these units and thermal runaway of lithium-ion battery packs in the BESS units.

Lithium-ion battery fires are extremely difficult to extinguish with conventional onboard methods, as the heat produced from thermal runaway can exceed 300°C (572°F), posing a high risk of the fire spreading. Although these risks are primarily associated with electric vehicle (EV) transport, the carriage of BESS units is becoming more frequent.

The BESS units involved in the recent incident were designed as stationary landside power supply units for electrical grids. Each unit was classified as UN3536 in accordance with the International Maritime Dangerous Goods (IMDG) Code adopted by the International Maritime Organization (IMO).

Lessons Learned

Ensuring Proper Cargo Securing

In addition to following a vessel's cargo securing manual and implementing the approved vessel storage and lashing plan, a vessel's crew must also conduct a thorough inspection of all the cargo-securing arrangements both during and after cargo loading. Such inspections are critical to identifying improper attachments or other concerns with cargo securement that could compromise the assumptions planners make in implementation of the plan. Not ensuring cargo is properly secured can result in cargo breakaway. Special attention should be placed on examining fitment of components, such as lashing belt hooks, wire, or chain falls used to secure the cargo to ensure they are properly seated (fully engaged) on the D-rings or other points of securement.
(Source: NTSB investigation report MIR-25-41)

As a preventive measure, it is recommended to formulate appropriate lashing plans and to strictly implement secure cargo lashing and verify its proper condition in accordance with the vessel's Cargo Securing Manual (CSM) and the Code of Safe Practice for Cargo Stowage and Securing (CSS Code) adopted by the IMO. Furthermore, it is recommended to conduct regular inspections of the securing arrangements during the voyage, and to retighten lashings as necessary, especially when heavy weather is anticipated, to prevent any cargo movement.

Important Regulatory Note:
Although the incident investigated by the NTSB occurred in the cargo holds (under deck), it is important to note that the stowage of UN 3536 (LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT) is now restricted to "On Deck Only" following the IMDG Code amendment which became mandatory from 1 January 2026.

For further practical guidance on the stowage and securing of non-standardised cargo in accordance with the CSS Code, you may find the following P&I Loss Prevention Bulletin helpful: Stowage and securing of non-standardised cargo Part 1 issued in January 2026, and Stowage and securing of non-standardised cargo Part 2 issued in March 2026 (for Members only).

We will continue to provide the latest information and technical insights to assist our Members in preventing accidents and enhancing the safety of their operations.

Yours faithfully,

The Japan Ship Owners' Mutual Protection & Indemnity Association